

Fifth Grade Ecology Trip Field Study #3

An Inquiry-based Fresh Water Comparison

Objectives:

- Students will use scientific processes.
- Students will gather information to answer the questions:
 - What impacts water quality?
 - How does the land use of surrounding areas impact the water used by humans, animals and plants?
 - What indicators do we use to determine water quality?
 - Is our water of high quality?

Overview: During this field study, the students will visit up to three fresh water sites on the grounds of the Peace Valley Nature Center. To begin, the students will be introduced to the definitions for the three bodies of water being studied: stream, pond, and lake. They will then travel to one of the three bodies of water and use their observation skills to determine which of the three types is being studied. There is a possibility that students may not visit all three bodies of water due to time constraints.

Upon arrival at the stream, pond, or lake, the students will engage in a discussion about water use, types of water, and the availability of **potable** (drinkable) water on earth. They will be asked to think about the demand for water as it relates to animals, plants, and people. The students will also utilize knowledge of the water cycle to gain an understanding of why water quality monitoring is important.

Following the discussion about water use and quality, the students will perform chemical testing on the water at each site to monitor its quality. The test kits the students will be using are age-appropriate and quite fun to use. Water will be tested for dissolved oxygen (DO), biochemical oxygen demand (BOD), pH, nitrates, phosphates, and turbidity. After completing the chemical testing, the students will interpret the results in order to draw conclusions about the water quality at each site. One of the tests, BOD, will need to be read after returning to the classroom.

In conjunction with the water testing, the students will be studying colored land use maps to analyze how agricultural and industrial land use may affect water quality. The students will also be asked to assess what physical conditions may affect the water such as: light, plants, weather, and temperature. All of the data gathered will be used to make judgments about water quality in relation to our environment.